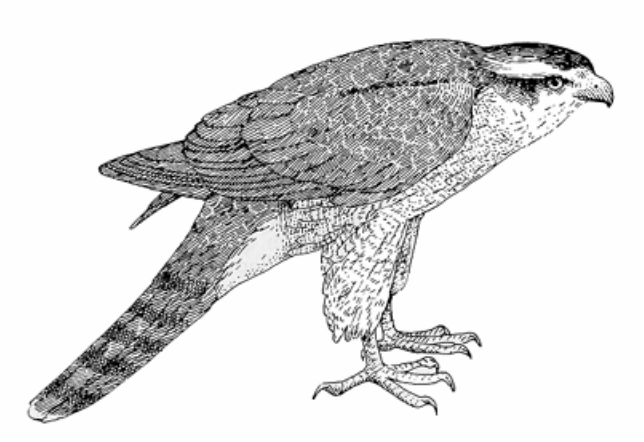
Species Notes for
Northern Goshawk (*Accipiter gentilis):*

California Wildlife Habitat Relationships (CWHR) System
Level II Model Prototype



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PREFACE

This document is part of the California Wildlife Habitat Relationships (CWHR) System, operated and maintained by the California Department of Fish and Game (CDFG) in cooperation with the California Interagency Wildlife Task Group (CIWTG). The information will be useful for environmental assessments and wildlife habitat management. For more information on the CWHR System and all of its components, please see http://www.dfg.ca.gov/biogeodata/cwhr/.

Notes such as these were prepared for 32 species by the US Forest Service Pacific Southwest Research Station as part of a 2000/2001 contract with CDFG. Each is part of a prototypical "Level II" model for a species. As compared with the "Level I" or matrix models initially available in the CWHR System, "Level II" models incorporate spatial issues such as size of a habitat patch and distance between suitable habitat patches.

The notes are divided into three major sections. First, "Distribution, Seasonality and Habitats" represents information in the existing Geographic Information System (GIS) range data and in the Level I matrix model for a species. There is a vector-based GIS layer of geographic range and seasonality for each species in CWHR as well as a matrix containing all suitability ratings – High (H), Medium (M), Low (L) or Unsuitable (-) – by habitat (e.g. BOW or Blue Oak Woodland), stage (e.g. 4P or small tree, open canopy) and life requisite (reproduction, cover, or feeding.). Tools such as "Bioview" within the CWHR software will return these suitability ratings for a species to a user-supplied data set containing habitats and either stages (e.g. 4P) or stage values (e.g. trees of 16.0 average diameter at breast height in a stand of 30% canopy closure).

Second, "Required Attributes of Suitable Habitat Patches" represents spatially-explicit requirements of a species. The information here builds upon what is known about habitat patch size and the most critical attributes of a habitat patch needed by an individual of the species. Applications such as "GRABS", which stands for "Grouping Resources Algorithm for Biological Data Sets", will "clump" pixels of a user-supplied raster-based GIS data set representing patches of a suitable habitat and stage for a species. It will calculate area, perimeter, and complexity within each patch and analyze its outside edge for juxtaposition with other habitats and stages of interest. Many of the attributes are what were once called "elements" in the CWHR model.

Third, "Spatial Habitat Requirements for Persistence of Population" represents estimates of the amount of habitat needed to maintain a population of a species. This may be considered the starting point for a "Level III" CWHR model, which would take into account spatial issues as well as a number of population parameters not yet incorporated into CWHR. Such information is included for most, but not all, Level II-modeled species.

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Distribution, Seasonality and Habitats

Model Parameter	*Threshold Value(s) for Species*
Biogeographic Range and Seasonality range of the species, by season, in the state	Species is a scarce to uncommon yearlong resident. It breeds in the North Coast Ranges through the Sierra Nevada, Klamath, Cascade, Warner Mountains, and in the Mount Pinos, San Jacinto, San Bernardino and White Mountains. It is likely that the value of foraging areas varies with season. In winter, habitat that supports resident birds like jays, nuthatches, and woodpeckers should be favored as these prey species are resident and active throughout the winter. In spring, riparian and hardwood dominated areas where migrant birds congregate upon and after arrival should be favored. In late spring though the fall after emergence of young mammals, openings in forest and open forest conditions should be favored.
Suitable Habitats habitats rated in the California Wildlife Habitat Relationships (CWHR) System as high (H), medium (M), or low (L) suitability for reproduction, cover, or feeding	Species finds suitability (H --->L) for reproduction, cover and/or feeding in some or all stages of: Alpine Dwarf Shrub, Aspen, Bitterbrush, Blue Oak Woodland, Blue Oak – Foothill Pine, Chamise-Redshank Chaparral, Coastal Oak Woodland, Douglas Fir, Eastside Pine, Eucalyptus, Jeffrey Pine, Juniper, Klamath Mixed Conifer, Lodgepole Pine, Low Sage, Mixed Chaparral, Montane Chaparral, Montane Hardwood, Montane Hardwood-Conifer, Montane Riparian, Pinyon Juniper, Ponderosa Pine, Red Fir, Redwood, Sagebrush, Sierran Mixed Conifer, Subalpine Conifer, Valley Foothill Riparian, Valley Oak Woodland, and White Fir.
Water whether water is required, enhances, or is irrelevant for habitat suitability	Water enhances suitability.

Required Attributes of Suitable Habitat Patches

Model Parameter	*Threshold Value(s) for Species*
Patch Size L = low suitability. This is the minimum patch size for persistence of an individual. H = high suitability. Above this patch size, area alone does not increase habitat suitability for an individual.	**Nesting:** 20 acre (L) 100 acres (H) **Foraging:** 5 acre (L) 25 acres (H) **Distance from Nesting to good Foraging:** <0.25 miles (H) 1.5 miles (L) **Nesting + Foraging** 1 square mile (L) 5 square miles (H)
Edges requirements for a transition between two life form types – tree/shrub, tree/grass, tree/water, tree/agricultural, shrub/grass, shrub/water, shrub/agricultural, grass/water, grass/agricultural, or water/agricultural	A tree/grass edge is required for feeding, with large trees to perch in on the edge of a foraging area**.** Bird goes to different habitats for different purposes (e.g., forest for nesting and grassy meadow for foraging).
Structural Habitat Attributes requirements for live vegetation, dead or decadent vegetation, vegetation residues, physical features, or human-made features	A tree layer, riparian inclusion, or large individual trees (pines or hardwoods) are required for reproduction. Habitat should include residuals like logs to support the small mammals that are a large part of the diet. Larger snags and tops of dead trees are associated with food species like woodpeckers.
Food vegetative or animal diet requirements	Medium-sized birds, large birds or small mammals are essential. Species also eats medium-sized mammals, small birds, carrion, and terrestrial insects.

Spatial Habitat Requirements for Persistence of Population

Area for a Social Unit
25 square miles (L) 100 square miles (H)